



Week of Jan. 3, 2005

Vol. 6, No. 1

Well, what can you say about 2004? To say it was filled with ups and downs for the Laboratory would be putting it mildly. Few would dispute that the year brought major challenges, most notably the series of events that led to the suspension of work in mid-July. Yet, the Lab community stepped up throughout the year to meet those challenges, while continuing to do the best job possible on behalf of the nation — for instance, 100 percent of Level I and II activities, and approximately 70 percent of Level III activities have resumed as of press time. The vast majority of employees ended 2004 much

as they began it, proud of the Lab's technical achievements and scientific breakthroughs and dedicated to continuing the Lab's great tradition of scientific excellence. Employees took pride in the honors bestowed on co-workers and colleagues, welcomed distinguished visitors and recommitted themselves to always keeping safety and security foremost in the course of doing their work. With a new year beginning that no doubt will contain its share of challenges and rewards, it's worth reflecting on some of the happenings around the Lab during 2004.

## Technical/Programmatic Accomplishments



**Go solar racer go** — Students from Aspen Elementary School did some hands on pit crewing at the Bradbury Science Museum building their own solar powered racers. Aspen fifth and sixth graders attended the robotics workshop.

**Workers turn out in force to clean up** — Employees from across the Laboratory helped beautify the areas in which they work by participating in the Lab's first Great Garbage Grab in April. The two-week event



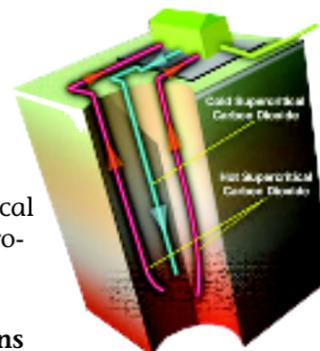
resulted in about 600 bags of trash being picked up from technical areas Labwide. Event organizers hope to make the litter clean up and beautification effort an annual event.



**Los Alamos leading research to power planned journey to Jupiter's icy moons** — A proposed U.S. mission to investigate three ice-covered moons of Jupiter will demand fast-paced research, fabrication and realistic non-nuclear testing of a prototype nuclear reactor within two years. Los Alamos is working with NASA to research reactor designs for the Jupiter Icy Moons Orbiter, an element of Project Prometheus, which is scheduled for launch after 2011.

*Mockup of 100 kilowatt reactor core for space power undergoes non-nuclear electrical testing.*

**Hot dry rock goes supercritical** — A proposed invention has the potential to take global geothermal energy science in new and exciting directions. Based on expertise gained during the development of the Laboratory's Hot Dry Rock Project, a Los Alamos scientist has proposed a method for producing geothermal energy using supercritical fluids for the stimulation of the underground reservoir, production of the geothermal energy and heat transport.



*Tom Bowles, the Lab's chief science officer, inspects the ultra-cold neutron extraction port at LANSCE*

**Ultra-cold neutrons source at Los Alamos confirmed as world's most intense** — Researchers at the Los Alamos Neutron Science Center and eight other member institutions of an international collaboration took a giant step toward their goal of constructing the most intense source of ultra-cold neutrons in the world, measuring ultra-cold neutron production in their new source for the first time.

**Lab scientists explore complexities of sea ice from high desert venue** — For nearly a decade, Laboratory researchers have been upgrading and fine-tuning a sea-ice modeling program created at Los Alamos. From their dry place in New Mexico's high desert, the Lab team has helped climate scientists around the world develop a better understanding of the surprisingly complicated role that sea ice plays in the global climate.



*Elizabeth Hunke and Bill Lipscomb of Fluid Dynamics (T-3) west of NM 30 near Los Alamos.*

*continued on Page 4*

Los Alamos  
**NewsLetter**

P.O. Box 1663  
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LALP-05-001



When employees drag water and ice into the office on their feet and clothing, the danger of slipping and falling increases. It's one of the special safety hazards of winter and inclement weather, but also one that is easily preventable with awareness and foresight. Here are a few tips to help avoid this common winter safety risk.

Be prepared; watch the local weather news. If traveling, check out a national forecast to make sure you have the clothing and proper footwear for the weather at your destination. Knowing what to expect is essential for proper preparation.

To cut down the risk of slipping on wet indoor surfaces

- shorten stride lengths to maintain a center of balance;
- walk with feet pointed slightly outward, creating a stable base;
- make wide turns at corners;
- post signs to warn of wet areas;
- clean up water that drips from clothing and shoes; and
- be careful of wet shoes on a dry floor; they can be just as slippery as dry shoes on a wet floor.

The risk of slipping outdoors in inclement weather can be reduced by doing the following:

- slow down to allow time to react to a change in traction;
- wear slip-resistant shoes or over-shoes (carry work shoes); and
- wear sunglasses when outdoors in ice and snow to help see possible hazards.

Remember, proper footwear is important. Wear slip-resistant shoes appropriate for the job. Some have special sole patterns specifically engineered for slippery work areas. Or, use abrasive strips to increase traction.



FROM THE TOP

## Director welcomes back the work force

Welcome back! I hope you enjoyed the holidays and, more importantly, that you took full advantage of some well-earned and deserved time away with family and friends.

Over the holidays I reflected on the many things for which I am personally thankful — my family, my newborn twin granddaughters who celebrated their first Christmas, and Joanne's and my home in a wonderful place like Los Alamos.

I also am thankful for the outpouring of generosity from Lab employees to families in need throughout Northern New Mexico. Your willingness to share with so many families, your caring for neighbors throughout our region was extraordinary. My wish for the new year is simple: that we join together with a rekindled energy for surmounting the challenges ahead.

There is no doubt that we can accomplish the task we're facing. You responded to the Lab's suspension and resumption of operations with a phenomenal effort; in fact, it was only through your hard work and perseverance that we have restarted 100 percent of Level I and II activities, and approximately 70 percent of Level III activities by the start of the winter break.

Especially when you consider the scope of our resumption effort, the progress we have made is remarkable. The restart review covered more than 3,000 individual operations and activities across the Laboratory, and actively involved the more than 14,000 staff, contractors, students and others. In total, the resumption process identified almost 1,700 safety-related corrective actions, ranging from administrative and documentation issues to operational and managerial oversight activities.

The Classified Removable Electronic Media (CREM) restart was similarly complex, and achieved results just as dramatic. The Department of Energy has assessed, reviewed and approved 17 of the 19 CREM libraries and 10 satellite locations; this reduces the number of sites housing CREM by 95 percent (from 89 buildings with 733 rooms to 29 buildings with 37 rooms). Additionally, we have reduced the number of users with direct access to CREM by 99 percent by implementing a system in which highly trained classified media custodians control all access to the CREM libraries.

Thank you for your efforts, which have made and will continue to make this Lab the "World's Greatest Science Protecting America." I hope you had a good and restful holiday; I look forward to having a very productive 2005. Again, welcome back!



Laboratory Director  
G. Peter Nanos



### NewsLetter

The *Los Alamos NewsLetter*, the Laboratory bi-weekly publication for employees and retirees, is published by the Public Affairs Office in the Communications and External Relations (CER) Division. The staff is located in the IT Corp. Building at 135 B Central Park Square and can be reached by e-mail at [newsbulletin@lanl.gov](mailto:newsbulletin@lanl.gov), by fax at 5-5552, by regular Lab mail at Mail Stop C177 or by calling the individual telephone numbers listed below. For change of address, call 7-3565. To adjust the number of copies received, call the mailroom at 7-4166.

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Los Alamos National Laboratory is operated by the University of California for the National Nuclear Security Administration (NNSA) of the U.S. Department of Energy and works in partnership with NNSA's Sandia and Lawrence Livermore national laboratories to support NNSA in its mission.

Los Alamos enhances global security by ensuring safety and confidence in the U.S. nuclear stockpile, developing technologies to reduce threats from weapons of mass destruction and improving the environmental and nuclear materials legacy of the Cold War. Los Alamos' capabilities assist the nation in addressing energy, environment, infrastructure and biological security problems.



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### Laboratory leaders discuss fiscal year objectives, goals

Everett Beckner, right, National Nuclear Security Administration deputy administrator for defense programs, talks about NNSA's perspective as a customer of Los Alamos at a recent Senior Executive Team retreat in the J. Robert Oppenheimer Study Center at Technical Area 3. Laboratory senior managers and other leaders discussed and reviewed Laboratory corporate goals and objectives for the fiscal year. Photo by LeRoy N. Sanchez

# Manhattan Project's Bacher dead at 99

Robert Bacher, a physicist who worked at Los Alamos Laboratory during the Manhattan Project died Nov. 18, 2004. He was 99.

Bacher's accomplishments are often obscured by those of famous contemporaries such as J. Robert Oppenheimer, Hans Bethe and Enrico Fermi. However, his contributions to the Manhattan Project are indisputable.

Bacher grew up in Ann Arbor, Mich., and attended the University of Michigan as an undergraduate student. In 1926, he was awarded a bachelor's degree in physics. Bacher began his graduate education at Harvard University, but after a year returned to Michigan. He was awarded a doctorate in 1930.

Upon graduation, Bacher secured a post-doctorate fellowship at Michigan. He won similar fellowships at the California Institute of

Technology and the Massachusetts Institute of Technology, as well as a second fellowship at Michigan. When Bacher completed his post-doctorate work in 1932, the young physicist found himself out of work. Supported by his family, he began to develop an interest in nuclear physics during his year of unemployment. This new pursuit would change the rest of his life.

In 1934 Bacher began his teaching career at Columbia University, where he served until 1937. That year, he became an assistant professor at Cornell University. He was promoted to associate professor in 1940 and to full professor in 1945. However, Bacher did not confine himself to Cornell during these years.

In 1941, with war just months away, he returned to MIT as a leader at the Radiation Laboratory. Bacher still was at MIT in 1943 when J. Robert Oppenheimer summoned him to Los Alamos to lead the Experimental Physics Division. When the Laboratory was reorganized in August 1944, Bacher became leader of G ("Gadget," code name for the bomb itself) Division. As division leader, he was responsible for the design of the implosion, or "Fat Man," bomb. While at Los Alamos, Bacher also served on several committees, including the Governing Board, the Administrative Board, the Technical Board, the Coordinating Council, the Intermediate Scheduling Conference and the Cowpuncher Committee.

Immediately after the war, Bacher held a variety of posts, including a stint at the United Nations as one of Bernard Baruch's technical advisers. In 1946, Bacher was appointed a charter commissioner on the Atomic Energy Commission. The AEC's first chairman, David E. Lillenthal, said of Bacher, "He will make all the difference in the world." Bacher, the only scientist on the commission, accepted the post with some hesitation, but served effectively until his second term ended in May 1949.



Robert Bacher

After serving on the commission, Bacher questioned the military usefulness of the hydrogen bomb during the debate over its proposed development. He advanced his arguments in a logical and articulate manner that commanded the respect of even his most aggressive opponents.

In 1949 Bacher went back to Caltech, where he had worked as a post-doctorate fellow almost two decades before, to head the Physics, Mathematics and Astronomy Division. He rebuilt the division, attracting world-renowned physicists such as Richard Feynman and Murray Gell-Mann. Bacher remained at Caltech as a faculty member until his retirement in 1976. He was awarded the permanent title, Professor Emeritus.

## Support 'Support'



by Tom Bowles,  
chief science officer

Resumption activities at the Laboratory are continuing, and we expect full resumption of the remaining Level 3 activities in January. This has involved a tremendous investment of

effort on the part of employees in the technical divisions. Equally important is the contribution that has been made by the support side of the Laboratory. Coming into compliance with requirements has involved tremendous efforts on the parts of the Administration (ADA), Security and Facility Operations (SFO) and Technical Support (TS) directorates.

The support groups are just as committed to ensuring the successful outcome of this effort as the scientific staff are. The support staff have worked many nights and weekends in the Lab's resumption efforts — from the hard work that SUP put in at the end of FY04 to meet programmatic needs to the work of the Readiness Review Board to the extraordinary efforts of the safety and security staff to assess and redress issues. While people like John Bretzke may have been very visible due to COMPASS activities, there were literally thousands of employees on the support side working hard to get [the Lab] back on track. It is important to stop and reflect on the activities of all the behind-the-scenes efforts on both the technical and the support sides of the Laboratory and to thank everyone for their hard work.

While we have made quite significant progress in resuming activities at the Laboratory, we clearly still have a long way to go in resolving the underlying issues that are the root cause of our problems. It is very clear to me that the director and senior management are fully committed to improving our ability to carry out the science that supports our mission. And the support side of the house is working to make improvements in their operations that will improve our ability to do science. While we work these issues, it is important to remember that we are all in this together. Thus, I hope that the technical side of the house will remember that we need to support "Support."

## Laboratory organizations honored at Quality New Mexico Awards ceremony

by Hildi T. Kelsey

For steady progress on their process improvement path and dedication to quality principles, both the Environmental Stewardship (ENV) Division (formerly the Risk Reduction and Environmental Stewardship Division) and Internal Assessments (AA-2) earned 2004 Quality New Mexico Awards. A formal awards presentation, featuring Governor Bill Richardson, is scheduled for March 31, 2005, in Bernalillo during QNM's annual conference.

In reference to the Lab's award winners, Julia Gabaldon, president and CEO of QNM, said: "These organizations have looked inside themselves and recognized the importance of quality in their journey to excellence. Los Alamos [National Laboratory] has been one of our major partners from the very beginning. We are grateful to [the Laboratory] for making a commitment to improving New Mexico."

QNM is designed in accordance with and recognized by the Malcolm Baldrige National Quality Program — an effort to stimulate performance excellence named for Malcolm Baldrige, who served as Secretary of Commerce from 1981-1987. QNM's mission is to "Motivate, Educate and Congratulate New Mexico Businesses and Organizations for Achievement in Performance Excellence."

Based on quality initiative information contained in its quality self-assessment submission, ENV Division obtained QNM's Roadrunner recognition for significant progress in quality due to its solid approach to quality management and implementation of successful systems, processes and plans. The Internal Assessments Group was awarded QNM's Piñon recognition regarding commitment to quality concepts and principles in light of the group's productive, systematic approach to quality practices.

In appreciation of these organizations' continual quality efforts, Bill Wadt, Prime Contract (PCO) Office leader stated, "All Lab employees should applaud and encourage organizations, such as the ENV Division and the Internal Assessments Group, who have committed to use the Baldrige National Quality standards to drive systematic improvement in their operations."

Other community award winners from Northern New Mexico are

- Los Alamos Middle School
- Mountain Elementary School in Los Alamos
- Town of Taos, N.M.
- Kit Carson Electric Cooperation in Taos.

Several other award recipients reside in Albuquerque, Gallup and surrounding areas in Southern New Mexico. For a complete list of winners and more information on QNM, go to the QNM Web site at <http://www.qualitynewmexico.org> online.

# 2004: Year in Review



**Nanos stresses importance of education/Encourages Native American students** — A Santa Fe Indian School student listens to Laboratory Director G. Peter Nanos at a lunch. Several students were invited to Los Alamos to learn about internship and undergraduate students programs and scholarships available through the Laboratory Foundation. Nanos noted the importance of obtaining a quality education, not only for the students, but for the Laboratory.



**KSL Services demonstrates commitment to Math and Science Academy** — Española Middle School seventh-grade students attended a presentation in the school's library where KSL Services, the Laboratory's facilities and site support services contract company, presented a check for \$200,000 to the Laboratory's Math and Science Academy.



**Program emphasizes math, science for northern area girls** — An estimated 150 teenage girls from Northern New Mexico participated in the annual Expanding Your Horizons conference in the Immaculate Heart

of Mary Catholic Church Parish Hall. The program promotes the continuing advancement of mathematics and science education for young women in grades eight through 10.



**Students use tools to unravel mysteries at science museum** — The Bradbury Science Museum sponsored forensics classes for fifth- and sixth-grade students as part of the museum's summer activities. Students acted as crime-lab or forensic scientists, using science to help solve a crime.



(left to right) Hui Li of Plasma Physics (X-1), Philipp Kronberg of the Institute of Geophysics and Planetary Physics (EES-IGPP) and Stirling Colgate of Theoretical Astrophysics (T-6) stand near the Los Alamos radio antenna of the Very Long Baseline Array.

**Scientists announce cosmic ray theory breakthrough** — Scientists working at the Laboratory have proposed a new theory to explain the movement of vast energy fields in giant radio galaxies. The theory could be the basis for a whole new understanding of the ways in which cosmic rays — and their signature radio waves — propagate and travel through intergalactic space.

**Scientists demonstrate quantum teleportation with atoms** — A Laboratory researcher collaborating with researchers at the University of Innsbruck in Austria, demonstrated the first teleportation of a quantum state from one trapped atom to another located 8 microns — slightly less than a thousandth of an inch — away. This is the first time quantum teleportation has been achieved with actual particles, and the first time it has been demonstrated in an entirely deliberate and controllable manner.

**Los Alamos computers probe how giant planets formed** — Nearly five billion years ago, the giant gaseous planets Jupiter and Saturn formed, apparently in radically different ways. So says a scientist at the Laboratory who created exhaustive computer models based on experiments in which the element hydrogen was shocked to pressures nearly as great as those found inside the two planets.

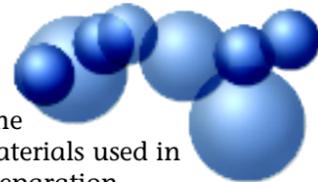


**Scientists model dynamics of DNA transcription** — Laboratory researchers collaborating with colleagues at Harvard Medical School have developed a model and diagnostic tools to simulate the dynamics of DNA. The work is an important step towards beginning to decipher the genetic information contained in the human genome, and could be a significant leap in understanding the fundamental processes of life.



Jianzhong Zhang of the Manuel Lujan Jr. Neutron Scattering Center (LANSCE-12) sets up an experiment in a toroidal anvil press.

**Los Alamos pressure process makes pure zirconium glass** — Zirconium may not be a girl's best friend, but by squeezing the metal with roughly the same pressure needed to make diamonds, scientists at Los Alamos made a pure glass that may prove nearly as valuable as real diamonds. The pure metallic glass formed by their high-pressure method holds promise for stronger, more stable materials for medical, sports and electronic products.



**Laboratory advances the art and science of aerogels** — Los Alamos scientists have demonstrated a novel method for chemically modifying and enhancing silica-based aerogels without sacrificing the aerogels' unique properties. Aerogels are low-density, transparent materials used in a wide range of applications, including thermal insulation, porous separation media, inertial confinement fusion experiments and cometary dust capture agents.



**Los Alamos instruments return to Earth on Genesis spacecraft** — Carrying unique samples of the sun, NASA's Genesis spacecraft tumbled to Earth, crashing into the desert floor near the U.S. Army Dugway Proving Ground in Utah in September. In the days that followed, scientists didn't believe any collection wafer survived without damage, but were hopeful that all of the primary science goals still could be met. For more information on Genesis, go to [genesismission.jpl.nasa.gov](http://genesismission.jpl.nasa.gov) online.

**Laboratory grows world record-length carbon nanotube** — Laboratory scientists working in collaboration with chemists from Duke University have grown a world record-length four-centimeter-long, single-wall carbon nanotube.

**Blue Mountain supercomputer is decommissioned** — Blue Mountain, the Laboratory's first supercomputer for the National Nuclear Security Administration's Advanced Simulation and Computing program, was taken out of service in November.



continued on Page 5

# 2004: Year in Review

## Operations

**Lab's Isotope Production Facility dedicated** — In January, the Laboratory dedicated its new Isotope Production Facility at the Los Alamos Neutron Science Center at Technical Area 53. The IPF will produce radioisotopes for applications from commercial uses to medical imaging and therapy, including some short-lived isotopes used for the treatment of cancer.



*Louie Salazar of Isotope and Nuclear Chemistry (C-INC) uses the hot cell manipulators in the new Isotope Production Facility*

**Salary adjustments to be reflected in paychecks** — In January, Laboratory Director G. Peter Nanos fulfilled his pledge to complete an independent analysis of salary issues and to quickly take actions to adjust significant salary differences. The pay stubs of 670 employees reflected pay adjustments resulting from an objective, comparative statistical analysis.



*From left to right, Carmelo Martinez of Hydrodynamics (DX-3), Vernon Lawrence of Operations Support (DX-4), Pedro Aragon of Dual Axis Radiographic HydroTest (DX-6) and Michael Archuleta of DX-3 were members of the first graduating class of the Firing Site Technician Apprentice (FSTA) program.*

**Firing-site technicians graduate from new program** — Operations Support (DX-4) announced the first graduating class of the Firing Site Technician Apprentice program. The 18 graduates of the program began work throughout the Dynamic Experimentation (DX) Division, fully competent in the setup and execution of explosive experiments.

**Lab begins Contingent Worker Project** — The director in March announced the beginning of the Contingent Worker Project. The Contingent Worker Project will determine whether work at the Laboratory should be performed by UC employees or contingent workers, and will result in reduced costs associated with contingent worker contracts.

site of the former Badge Office building at Technical Area 3. The area was cleared to make way for the new National Security Sciences Building under construction. The National Security Sciences Building will replace the Administration Building and is scheduled to open in 2006.



**Out with the old** — In March, only the foundation and construction debris remained at the

**Ground breakings** — In March, the Laboratory broke ground on a new Hydrotest Design Facility at Technical Area 22. The 14,000-square-foot Hydrotest Design Facility is scheduled to be completed in April 2005. And in May, ground was broken for the new Center for Integrated Nanotechnologies. The center is located northeast of the Materials Science Laboratory at TA-3. CINT is a Department of Energy/Office of Science Nanoscale Science Research Center operating



as a national user facility devoted to establishing the scientific principles that govern the design, performance and integration of nanoscale materials. The facility is scheduled to be completed in September 2005.

**Laboratory creates hydrogen and fuel-cell research institute** — Building on more than 25 years experience in the area of fuel cells, the Laboratory announced the creation of the Institute for Hydrogen and Fuel Cell Research (IHFCR) to better address technical issues and provide solutions for enabling key aspects of the hydrogen economy and broadening the use of fuel cells.



**New Pajarito Road access controls open** — A new access-control post at the east end of Pajarito Road with multiple guard stations and lanes opened in March. Once open to the public, Pajarito Road is now limited to vehicles in which at least one occupant holds a Laboratory-issued security badge.

**In 2004, the Laboratory signed several memorandum of understandings with New Mexico schools** to encourage collaboration between the Lab and the schools. MOUs were signed with New Mexico State University in Las Cruces, the New Mexico Institute of Mining and Technology in Socorro and Highlands University in Las Vegas. The Laboratory also signed an MOU with the Santa Fe Institute. The Santa Fe Institute MOU provides guidelines regarding patenting, commercialization and royalty sharing of jointly developed projects and ideas. The Lab signed an MOU with the University of New Mexico in 2003.



**A safety campaign with a personal twist** — Last year, the Nuclear Materials Technology (NMT) Division tried something new with its safety campaign that targets worker safety awareness — NMT employees in actual work environments with photos of their loved ones are

featured in the campaign that carries the message, "I wouldn't have nothin' if I didn't have you," with the subtext of "Be Safe, for Everyone's Sake."



**Laboratory donates funds to Oppenheimer house restoration project** — A check for \$50,000 was given by the Laboratory to the Los Alamos Historical Society, which will use the money for repairs and restoration on the J. Robert Oppenheimer house. The Department of Energy provided the monies as part of a Save America's Treasure matching grant for the preservation of Los Alamos' Manhattan-era-project buildings.



**Orbit visits Laboratory, meets Lab staff** — Albuquerque Isotopes mascot Orbit gets a hug from Sandra Martinez of Environmental Characterization and Remediation (ENV-ECR) during a

visit to Los Alamos last summer. Orbit met employees and spread cheer around the Otowi Building while also helping sell tickets to the Laboratory's Northern New Mexico Day at Isotopes Park.

**Laboratory's protective force gets a new set of wheels** — The Lenco BearCat, the Laboratory protection force's newest armored vehicle, which replaces the High Mobility Multipurpose Wheeled Vehicles or HUMVEEs used by Protection Technology Los Alamos. With numerous high-tech security features, including half-inch-thick armored plating for exterior protection along with 2-1/2-inch-thick bulletproof glass windows, the 15,000-pound armored vehicle also comes equipped with run-flat tires that remain inflated even after they have been punctured.



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## Visitors

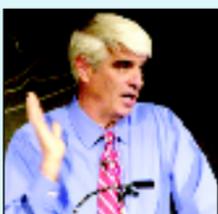


**Don Pettit**, a former Los Alamos staff member and current NASA astronaut, was at the Laboratory in January to give a Director's Colloquium.

**Cortez Williams** of Albuquerque talks about the historical contributions African Americans have made at a talk during the Laboratory's celebration of Black History Month.



**Hazel Dean-John Muhlenbruch**, founder and original director of the Seneca Language Center, Allegany Reservation in New York, talks to a Laboratory audience in celebration of American Indian Heritage Month.



Retired U.S. Air Force colonel and former astronaut **Sid Gutierrez** speaks at a Hispanic Heritage Month talk.

**Brian Bowsher**, director of research and applied science for the Atomic Weapons Establishment in Aldermaston, United Kingdom.



**Kyle McSlarrow**, deputy secretary of the Department of Energy

San Ildefonso Pueblo Gov. **Dale Martinez**, left, and **Neil Weber**, director of San Ildefonso Pueblo's Department of Environmental and Cultural Preservation.



**Raymond Orbach**, the Department of Energy's Office of Science director, left, and U.S. Rep. **Ken Calvert**, R-Calif., right.



**Sen. Jeff Bingaman**, D-N.M.

# 2004: Year in Review

**New west parking structure opens** — A new 337-space TA-3 West parking garage opened in April. The structure helps address concerns about parking from Lab employees who work in and around Technical Area 3.



**Lab changes policy on sanctioned groups** — In an all-employee memo, the director said the Laboratory is discontinuing the designation of Laboratory-sanctioned organizations and will no longer allow outside organizations

to use government resources at the Laboratory to conduct their business.



**The World's Greatest Science Protecting America**

**Lab unveils new logo, slogan** — In May Laboratory Director G. Peter Nanos showcased the Laboratory's new Unique Value Proposition, or slogan, "The World's Greatest Science Protecting America."

**DOE to bid Los Alamos contract separately** — In June, The Department of Energy decided it will bid the management contract for Los Alamos as a separate competition from the Lawrence Livermore National Laboratory con-

tract. "I have concluded that it is very important to ensure we have the broadest possible competition for future contracts," said Energy Secretary Spencer Abraham. "Separating these two competitions will achieve that result."

**Nanos suspends all work at Laboratory** — On July 16, Laboratory Director G. Peter Nanos suspended all work activities at Los Alamos to "ensure this Laboratory operates safely and meets all our national security obligations." The move to suspend all activities at the Lab was made by Nanos with the concurrence of the Senior Executive Team following several safety and security incidents. In an all-employee memo, Nanos stressed the seriousness of the situation and the need for all Laboratory workers to comply with all security and safety regulations.



**Modified work schedule suspended for all Lab workers** — The Laboratory's 9/80 modified work schedule, which allows personnel to earn an off day every other Friday, was suspended until further notice. The suspension was effective Aug. 30.



**Bradbury Science Museum is open for business** — The Bradbury Science Museum reopened Aug. 9 with nearly 500 people visiting that day. The museum at 15th Street and Central Avenue had been closed since mid-July when Laboratory Director G. Peter Nanos imposed a Labwide suspension of all work.

**Enterprise Project's "Release One" unveiled**

— The Enterprise Project's Release One software product was unveiled. Release One allows users to perform accounts payable and cash-management tasks using software provided by Oracle Corp., a software development company. Release One marks just one step in the Enterprise Project's phased multi-year approach.



**Lab's NMT Division resumes operations** — Laboratory Director G. Peter Nanos in November approved the Nuclear Materials Technology (NMT) Division's proposal for resumption of operations, a crucial marker in its efforts to operate with improved safety, security and compliance.

**Energy Secretary resigns** — In a letter to President George W. Bush dated Nov. 14, Energy Secretary Spencer Abraham resigned his position. Abraham touted the Department of Energy's significant success toward reducing America's dependence on foreign sources of energy, improving the environment and further securing the homeland through efforts to reduce nuclear proliferation. Samuel Bodman, deputy Treasury secretary, was selected to be the next Energy secretary by President George W. Bush, pending confirmation.



**Draft RFP for contract to manage the Lab released** — In December, the Department of Energy released its draft Request for Proposal for the competitive selection of a management and operating contractor for the Laboratory. The draft RFP comment period will be open through Friday (Jan. 7). The draft RFP, to be issued on a full and open basis, seeks interested parties with the capability "to manage world-class science and achieve excellent operations and management performance."



**All level 2 activities at Lab approved to resume** — In December, Laboratory Director G. Peter Nanos approved the final management self-assessment bringing to 100 percent the risk-level 2 MSAs now approved for resumption. The approval of the Security and Safeguards (S) Division's MSA was the last of 24 MSAs completed under the COMPASS Project to assess safety and security throughout the Laboratory.

*continued on Page 7*

# 2004: Year in Review

## Awards/Honors



**Two employees recognized for community service** — Laboratory employees Barbara Tenorio-Grimes of the Government Relations Office (GRO) and Roger Byrd of Space and Atmospheric Sciences (ISR-1) are recipients of the 2003 community service award from the American Indian Science and Engineering Society.

**Los Alamos scientist named Asian American Engineer of Year** — Laboratory scientist Wu-chun Feng was named the 2004 Asian American Engineer of the Year by the Chinese Institute of Engineers/USA. Feng, of the Advanced Computing Laboratory (CCS-1) was honored for his many recent research achievements, including his innovations in supercomputing and high-speed networks.



**Two Lab groups win Quality New Mexico awards** — The Risk Reduction and Environmental Stewardship (RRES) and Nuclear Materials Technology (NMT) divisions received the 2003 Piñon Award in the Quality New Mexico awards program. The two groups were honored for "serious commitment to quality concepts and principles," according to Quality New Mexico.



Linton Brooks, left, National Nuclear Security Administration administrator, congratulates Lynne Goodwin and Kim McMurry, right, of Genomic Sequencing and Computational Biology (B-5) at a NNSA Pollution Prevention Awards ceremony. Next to Brooks is Laboratory Director G. Peter Nanos.

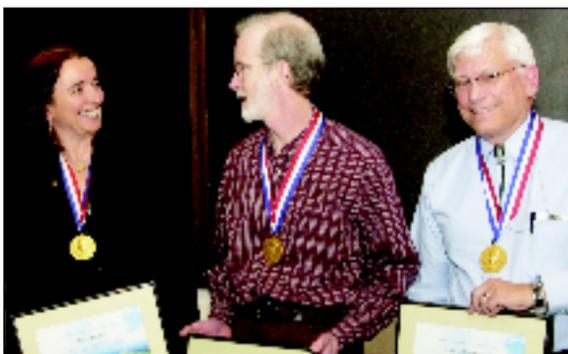
**Lab wins two NNSA pollution-prevention awards** — Two Lab projects received 2004 Pollution Prevention Best-in-Class awards from the National Nuclear Security Administration. The winning projects are "Formamide Replacement in Genetic Sequencing" by Lynne Goodwin and her team from Bioscience (B) Division and "Pollution Prevention at the Heavy Equipment Maintenance Shop" by John Keene and his team from KSL Services.

Facility operators and management for its long history of protecting the environment with the association's Environmental Excellence Award for 2003.

**Laboratory workers receive Defense Programs Awards of Excellence** — Nearly 500 staff working in Los Alamos' nuclear weapons program and supporting divisions were honored with the National Nuclear Security Administration's Defense Programs Awards of Excellence for 2003.

**Laboratory Diversity calendar receives prestigious DOE award** — The Laboratory received a U.S. Department of Energy "2004 Diversity Best Practices" award for an online calendar that promotes diversity awareness among Laboratory employees. Representatives from the Laboratory's Diversity Office (DVO) accepted recognition for the Weaving Our Worlds (WOW) Diversity Calendar at DOE's Human Resources & EEO/Diversity Symposium.

**Los Alamos supercomputing cluster software wins prize** — Researchers in the Laboratory's Advanced Computing Laboratory were honored for their advances in connecting thousands of computers together to create clusters with much of the power of traditional supercomputers at a fraction of the cost. Los Alamos' Clustermatic 4 software suite won top honors for OpenSource Cluster Solution in the recent ClusterWorld Conference and Expo.



Bette Korber, left, of Theoretical Biology and Biophysics (T-10), Greg Swift, center, of Condensed Matter and Thermal Physics (MST-10) and Fred Mortensen of Thermonuclear Applications (X-2).

**Three Laboratory scientists named E.O. Lawrence Award recipients** — Laboratory scientists Bette Korber of Theoretical Biology and Biophysics (T-10), Fred Mortensen of Thermonuclear Applications (X-2), and Greg Swift of Condensed Matter and Thermal Physics (MST-10) were recipients of the prestigious E.O. Lawrence Award in 2004.



Cecilia Sanchez of Scientific Software Engineering (CCN-12) stands for a photo with Everett Beckner, National Nuclear Security Administration deputy administrator for defense programs.

## Visitors



U.S. Rep. Terry Everett, R-Ala., left, U.S. Rep. Silvestre Reyes, D-Texas, center, and Laboratory Director G. Peter Nanos wear 3-D glasses while looking at a demonstration of the visualization "power wall."



Retired Vice Admiral Frederick Ashworth



University of New Mexico President Louis Caldera



Rep. Tom Udall, D-N.M.



New Mexico Environment Department Secretary Ron Curry



Michael Hurley, senior counsel and director of the Counter-terrorism Policy Review of the National Commission



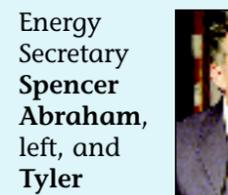
Vladimir E. Fortov, Russian Academy of Sciences



Sen. Pete Domenici, R-N.M.



Brigadier General Annette Sobel, left, director of the New Mexico Office of Homeland Security, and of the New Mexico Army National Guard, and Bruce Dove of the state Homeland Security Office



Energy Secretary Spencer Abraham, left, and Tyler Przybylek, chairman of the DOE's Source Evaluation Board

continued on Page 8

# 2004: Year in Review

**Lab wins Telly Award for safety walkaround video** — The Laboratory received a 2004 Bronze Telly Award in the safety category for its video, "Walkaround — Safety Walkaround Process." The Telly Awards showcase the best work of television stations, production companies, advertising agencies and corporate video departments throughout the world. The 2004 recipients were selected from more than 10,000 entries from all 50 states and five continents.



**Laboratory captures five R&D 100 Awards** — Los Alamos scientists captured five of R&D Magazine's 2004 R&D 100 Awards. The latest winners bring the Laboratory's total to 83 awards over the past 17 years.



**Q: Which of the Laboratory's 2004 scientific or administrative achievements stand out most in your mind and why?**



**Valerie Lopez of the Physics Division Office (P-DO)**

The most significant administrative achievement I can think of is all the hard work our Laboratory staff has done in standing this Laboratory back up after the [work suspension]. The tremendous spirit shown by the employees here continues to amaze me. I am proud to be a part of an institution [whose] employees are the best and brightest in the country.



**Phil Rivera of Space Data Systems (ISR-3)**

Bill Feldman of Space Science and Applications (ISR-1) found the first definitive evidence to indicate with a 99.9 percent consistency that there is water on Mars. That stands out as a scientific achievement for ISR-1 and International, Space and Response (ISR) as a division.



**Steve Glick of Biological and Quantum Physics (P-21)**

Probably in my mind, the top 2004 Lab achievement is administrative. That is, [the Lab's] own ability to recognize a number of business systems as being inadequate or inefficient and trying to better adapt them to the needs of [its] customers. While the jury is still out, it's a success — at least, the desire to change is.



**Ginnie Romero of Benefits & Employment Services (HR-B)**

The Director's Development Program. I believe it's a win-win situation for both the participant and the Laboratory. The participant gains the leadership experience and the opportunity to compete for senior-level management positions, and the Laboratory makes progress in developing a succession-management program.



**Rick Kelley of Environmental Geology and Spatial Analysis (EES-9)**

An administrative achievement that stands out to me is the signing of numerous collaborative research agreements with New Mexico universities.

## Restructures/Name Changes

**Los Alamos disbands division following accelerator success** — With the end of most of Los Alamos' design and engineering work for the nation's largest civilian science construction project, all 130 regular and subcontract employees in the Spallation Neutron Source (SNS) Division moved to other jobs within the Laboratory, including the skeleton crew of 35 who have been handling final details for the \$1.4 billion project at Oak Ridge National Laboratory in Tennessee. SNS is scheduled for completion in 2006.

**New Manufacturing Systems and Methods Division created at Lab** — A new division responsible for supporting and optimizing all nuclear and non-nuclear manufacturing work at the Laboratory was established within the Weapons Engineering and Manufacturing Directorate (ADWEM) in May.

**Prime Contract Office to be focal point for Laboratory contract issues** — The Laboratory's new Prime Contract Office (PCO) provides institutional focus and oversight for issues related to the Department of Energy Prime Contract for Laboratory operations. The Quality Improvement Office has been closed out and personnel affiliated with QIO are transitioning into the new roles to improve management of the prime contract.

**Bretzke to head Culture and Operations Model Plan and Surety System** — John Bretzke was named acting project director for the Culture and Operations Model Plan and Surety System. Bretzke marshaled the Lab's restart efforts, coordinating operational efficiency activities and communicating to employees with up-to-date information regarding restart operations.

**Laboratory announces organizational changes** — As part of efforts to strengthen Laboratory operations and senior management, Laboratory Director G. Peter Nanos announced a reorganization of his senior management team and the Laboratory's Operations Directorate. Don Cobb, associate director for Threat Reduction, is the acting deputy Laboratory director. Joseph "Cliff" Giles, principal associate director for Threat Reduction, is the acting associate director for Threat Reduction. Carolyn Mangeng, who has been acting deputy Laboratory director, is now acting associate director for Technical Services. Scott Gibbs, acting associate director for Operations, is the acting associate director for the Security and Facility Operations Directorate.

**Procurement moves to commodity-based structure** — Based on recommendations and initiatives from the Laboratory's Procurement Improvement Project, Procurement (SUP-1) has reorganized to a commodity-based structure. The change in the procurement organizational structure, which was implemented in December, is designed to improve the way the Laboratory purchases goods and services and provide customers and suppliers with a more effective and efficient mechanism for conducting business at the Lab.



## Lab wraps up year with Holiday Drive

*Benjamin Castillo of the Salvation Army places a holiday bear and other packages into a truck for transport to Santa Fe. The packages were picked up at the Community Relations Office (CRO) downtown, one of several locations where items could be donated as part of the Lab's 2004 Holiday Drive. All gifts and nonperishable food items were delivered to the Salvation Army. The items are donated to less fortunate children and families throughout Northern New Mexico. Laboratory workers also "adopted" 90 families in need this holiday season, collecting toys, clothing and non-perishable food items. Photo by LeRoy N. Sanchez*